Remarks

Claims 1 to 5, 7 to 18, 20 to 33 are pending in this application, and all have been rejected for the reasons discussed below.

Request for Telephone Interview

Should the examiner not withdraw the rejections, the undersigned counsel for Applicants respectfully requests a telephone interview to discuss the present application, the art of record, and the allowability of the claims. Counsel's contact information is listed below. It is believed that a telephone conference would be beneficial in moving this case toward an allowance.

Amendments

Claim 1 is amended in line 9 to replace "limiting" with - - retaining - - to more closely track the language of the specification in paragraph 50, for example. The support for this amendment is discussed at length below. No new matter is added with this amendment.

Claim 1 is further amended at line 10 to insert - - the - - before "two." This amendment is discussed below in regard to a §112, second paragraph rejection. No new matter is added.

Claim 17 at line 4 is amended to replace "actuator" with - - adjusting unit - -. Applicants make this amendment to address the §112, first paragraph rejection discussed below. This amendment is made to expedite this application and Applicants submit that the term "actuator" is fully supported by the specification because one skilled in the art would fully understand the discloser to include an actuator. Nonetheless, the art of record does not disclose such a feature in combination with the other claimed features.

Claim 18 is amended in lines 5 and 6 to replace "time" with - - duration - - for consistency with claim 1. No new matter is added.

The Present Invention

The present invention is directed to improved dairy animal milking processes and devices. The invention improves the milking process by gently milking an animal within a standard milking time. Milking dairy animals is performed by alternating vacuum and ventilation on the outside of a teat cup liner with a constant vacuum on the inside of the liner. This is called pulsation. The rate at which vacuum and evacuation are applied affects milking times and animal comfort during milking and its rate change can be graphically represented with a time curve.

"The invention is based on the general reflection that the curve, in particular the time curve of the evacuation phase and/or the ventilation phase is adjusted by means of two pressure changing rates. This option allows the adjustment of pressure drop and rise in the pulse chamber to be fast on the one hand while on the other hand being slow and gentle so as to allow a gentle but nonetheless fast milking operation," Spec. at page 4, paragraph 19, lines 18 to 22. This invention is not disclosed, taught, suggested or motivated by the art of record.

Rejection Under 35 U.S.C. §112, First Paragraph

Claims 1 to 5, 7 to 18, 20 to 28 and 31 to 33 were rejected under 35 U.S.C. §112, first paragraph, as being unsupported by a sufficient disclosure in the specification. Specifically, the examiner asserts that the disclosure fails to teach one skilled in the art to use a pressure change duration having speed rate changes *that do not exceed* a duration having no speed rate changes. Apparently, the claim language reciting that a pulsation

duration of the present invention *does not exceed* a standard pulsation duration is unacceptable because the examiner asserts that the application only discloses a "similar duration." (Action, pg. 11.) Apparently, the examiner would like the claim to read "similar duration," but that terminology is not necessary because the claims, as amended, are fully supported by the specification and satisfy the requirements of 35 U.S.C. §112, as discussed below. If after reviewing the comments herein, the examiner maintains that this claim language is unsupported, it is respectfully requested that the following citations be addressed in the telephone interview (requested above) or in the next office action.

Disclosure of Invention's Pressure Change Durations

Initially, Applicants are aware of no requirement to repeat exact phrases from the specification in the claims. The current claim language is plain, straightforward, and amply supported by the disclosure. Applicants respectfully note that pressure change durations of the invention as compared to prior art pressure change durations are illustrated in the original specification. Fig. 2 illustrates this very comparison and it is described in paragraph 90 of the published application below:

> [0090] The illustration in Fig. 2 is a schematic illustration. In reality the curves are more rounded than the lines 61, 62 and 63, 64, as is shown at line 65 for a conventional system. Moreover, this schematic illustration does not show the minor pressure difference employed to prevent a premature contact or a premature lift-off of the liner with or from the teat.

(Emphasis added.)

Thus, the comparison is depicted and described for those skilled in the art to use the invention. It, therefore, satisfies 35 U.S.C. §112, paragraph 1 for this reason alone.

In addition, the specification states, "The time period which a pressure changing phase requires, is *insignificantly longer* than in the prior art. Given a correspondingly higher ventilation rate after the liner is placed snug on the teat, which rate will then be harmless, the time period may *have the same length.*" (Published application at para. 20, emphasis added.) Another example states, "... *the pressure curve is controlled at least for the duration of one pressure changing phase in at least two speed rates*" (Published application at para. 11, emphasis added).

In addition to phases of similar duration, a phase modified by this invention can be less than a standard phase. The specification states,

> An adjusted control will now change the pressure change speed only in the movement periods of the liner so as to reduce the speed of liner movement and, as the liner is closed, change it to a higher, preferably maximum, pressure change speed such that the actual pressure changing phases retain a uniform length on the whole, as in the prior art. *A reduction of the pressure changing phases is possible as well.*

(Specification at para. 50, emphasis added.)

The term "to not substantially succeed" is supported and comparing pressure changing phases to known systems is disclosed throughout the specification. Applicants respectfully submit that 35 U.S.C. §112, first paragraph is satisfied. Thus, the amended claim language is supported by the specification because it recites durations that are similar to *and* less than standard durations. Thus, the claims satisfy 35 U.S.C. §112, first paragraph.

The examiner also rejects claim 17 because the word "actuator" does not appear in the application. The examiner states at page 11 of the action that an "adjusting unit" is a generic description of an "actuator.". Applicants amend claim 17 herein to recite the term "adjusting unit."

Rejection Under 35 U.S.C. §112, Second Paragraph

Claims 1 to 5 and 7 to 17 were rejected under 35 U.S.C. §112, second paragraph, as being indefinite because claim 1 recites two pressure changing speed rates in lines 9 and 10, but the examiner is unclear if these are the same speed rates referenced in line 8. Claim 1 is amended in line 10 to insert "the" in front of the pressure changing phase durations." Thus, Applicants respectfully submit that this rejection is traversed.

Rejection Under 35 U.S.C. §102(b)

Claims 1 to 5, 7 to 12, 14, 17, 18, 21 to 23, 26, 28, and 31 to 33 were rejected under 35 U.S.C. §102(b) as being anticipated by *Grimm et al.*, U.S. Patent 5,970,910 ("*Grimm et al.*"). The examiner asserts that all of the claim elements of these claims are disclosed in *Grimm et al.*, for the reasons stated on pages 3 to 8 of the action.

Initially, at page 12, the examiner asserts that Applicants' earlier explanation distinguishing *Grimm et al.* based on animal comfort is not proper because this feature is not recited in the claims. This reason for rejecting the claims is believed to be improper because Applicants are indeed permitted to argue and distinguish prior art based on the results of the invention without reciting all of those benefits in the claim. Certainly, there is no need to recite this benefit to distinguish *Grimm et al.*

The examiner comments that there are features such as animal comfort not recited in the claims, but there is no need to do so when considering the methods and apparatus that result in those benefits. Indeed, claiming results of a claimed invention is improper because it is impermissible to claim all possible means for achieving a result. *Holland Furniture Co. v. Perkins Glue Co.*, 277 U.S. 245 (1928). Thus, there is nothing improper

about explaining the benefits of claimed methods or apparatus even when those benefits are not recited in the claims.

Applicants respectfully disagree with the examiner's suggestion that animal comfort should be recited in the claims. Reciting a functional result in patent claims directed to an apparatus is typically not effective because apparatus claims must be distinguished in terms of structure, not function. *In re Schreiber*, 128 F.3d 1473, 1477-78, 44 USPQ 2d 1429, 1431-32 (Fed. Cir. 1997). Thus, Applicants' remarks describing the benefit of the device are not necessary to include in the claims.

Grimm et al.

Grimm et al. discloses a method of milking an animal with a vacuum cycle as illustrated by broken lines 19 and 20 in Fig. 9 and line 24 in Fig. 10. As seen in these pressure curves, the application of "low efficiency" pressure to slow down liner movement during pulsation results *in a longer pulsing cycle duration.* While this may result in a gentler milking pulsation, the duration of the pulse cycle will be longer, as *Grimm et al.*'s chart shows. The chart in Fig. 9 does not show a duration of the pressure changing phase that does "not substantially exceed" a defined standard pressure changing phase duration.

There is no disclosure anywhere in *Grimm et al.* of a pulsation cycle represented with a pulsation curve that is substantially flatter yet cycles at a normal rate. Therefore, *Grimm et al.* does not disclose the step of "retaining" the total time length for the pressure changing phase, with the two pressure changing speed rates, to not substantially exceed the defined standard pressure changing time length," as recited in amended claims 1 and 18.

Indeed, *Grimm et al.* discloses a modified pressure change phase for a milking cycle (as is seen in Figs. 9 and 10 of *Grimm et al.*) that is significantly longer and will result in longer milking times to achieve a desired result. Applicants are aware of no disclosure in *Grimm et al.* that recognizes problems associated with extended milking times and there is no disclosure of any method or device that accomplishes a modified milking pressure changing phase. Therefore, it is unnecessary to recite in the claim a method that reduces stress on an animal while maintaining standard pressure changing phase durations because it is merely the result of the claimed method.

Controlling a pressure curve without changing its pressure changing phase duration is not a minor or obvious detail in a modified milking process. Indeed, extending milking times in a commercial dairy results in reduced efficiency and fewer animals milked in any given parlor size. Even in view of these constraints, *Grimm et al.* fails to discloses to, suggest, teach or motivate one skilled in the art to use pressure phase changing methods or apparatus *without* extending pressure changing phase durations (that correspond directly to milking times), as recited in amended independent claims 1 and 18.

In the present invention, pressure phases and/or evacuation phases that are within the overall pulsation cycle are varied to achieve improved milking without extending milking times. To accomplish this objective, a valve operation in accordance with the present invention is provided in valve 9, or valves 20 and 21, for example.

Allowability over *Grimm et al.*

Given that *Grimm et al.* fails to disclose a key element of amended independent claims 1 and 18, the anticipation rejections are not appropriate. First, it may be helpful to address the examiner's response to Applicants' February 18, 2010 arguments.

The examiner states at page 11 and 12 of the Action that,

> In response to applicant's arguments that Grimm does not teach a milking method "without substantially increasing milking time" (page 18), Grimm anticipates the steps of the method as outlined by the claims. A preamble is generally not accorded any patentable weight where it merely recites the purpose of a process or the intended use of a structure, and where the body of the claim does not depend on the preamble for completeness but, instead, the process steps or structural limitations are able to stand alone. See *In re Hirao*, 535 F.2d 67, 190 USPQ 15 (CCPA 1976) and *Kropa v. Robie*, 187 F.2d 150, 152, 88 USPQ 478, 481 (CCPA 1951). Although the applicant contends that the first line of the claim is reflects this need, only what is actually written as claim limitations are required.

Applicants are not arguing that the preamble is a limitation. Instead, the bodies of the claims include all of the recitations to distinguish *Grimm et al.*

Further, the obviousness rejections under 35 U.S.C. §103(a) fail to meet a *prima facie* standard because there is no teaching, motivation or suggestion in *Grimm et al.* to modify a milking process to improve animal comfort and yet maintain *standard* pressure changing phase durations. This is true regardless of whether *Grimm et al.* is taken alone or in combination with *Kaneko* or *Krone*. Thus, claims 15, 16, 27, 31, and 32 would not have been obvious to one of ordinary skill in the art.

Innings et al.

Next, claims 1, 12, 13, 18, 20, and 23 to 25 were rejected under 35 U.S.C. §102(b) as being anticipated by *Innings et al.*, U.S. Patent 6,009,832 ("*Innings et al.*"). The reasons these claims were rejected are on pages 8 to 9 of the action. The examiner

asserts that *Innings et al.* discloses a sensor and a controller despite Applicants' position that *Innings et al.* discloses only a sensor. In response to the examiner's comments at pages 19 to 21 of the action, it is acknowledged that *Innings et al.* controls various parameters. Nonetheless, Applicants distinguished *Innings et al.* based on the timing of his controls and the lack of any teaching that the modified pressure changing phase duration does not exceed a standard pressure changing phase duration.

To maintain a rejection under 35 U.S.C. §102(b), all of the elements of each claim must be disclosed in a single reference. The test for anticipation requires a strict, not substantial, identify of corresponding claim elements. *Finisar Corp. v. DirecTV Group, Inc.*, 523 F.3d 1323, 1334-35, 2008 U.S. Appl. LEXIS 8404, 27-28 (Fed. Cir. 2008). Applicants respectfully submit that this burden has not been met in the action with respect to claims 1 or 18, and thus it was not met in the rejection of the dependent claims.

Innings et al. is understood to *monitor* not *control* the pressure changing phase in a pulse chamber. Figs. 2 and 3 do not illustrate controlled changes in a pressure curve. Rather, they illustrate pressure curve changes that naturally occur when a liner contacts or releases from an animal. The action at page 13 states,

> In response to applicant's arguments that Innings is used to sense changes in the pressure curve and not control them (page 20), Innings states:
>
> > Controlling the milking intensity may comprise *controlling one or more of milking parameters*, such as the milking vacuum level, the maximum pulsating vacuum level, *the pulsator ratio, the pulsating frequency*, etc. E.g. a reduction of the milking intensity may be performed by reducing the milking vacuum level, the maximum pulsating vacuum level or the pulsator ratio, or by increasing the pulsating frequency. (emphasis added).
>
> The various parameters controlled cause a change in the pressure curve, thus rendering the steps claimed.

This statement proves that controlling of the pressure changing phases does not occur during the phase itself. Rather the controlling is done in subsequent phases as a function of actual milk flow. This is not a disclosure of varying pressure changing phase durations with two changes in pressure changing speed rates as recited in independent claims 1 and 18. This is clear where *Innings et al.* states:

> The object of the present invention is to overcome the disadvantages mentioned above and to provide an improved way of controlling the milking process *in response to the actual milk flow*.
>
> Controlling the *milking intensity* may comprise controlling one or more of milking parameters, such as the milking vacuum level, the maximum pulsating vacuum level, the pulsator ratio, the pulsating frequency, etc. E.g. a reduction of the milking vacuum level, the maximum pulsating vacuum level or the pulsator ratio, or by increasing the pulsating frequency.
>
> (Emphasis added.)

None of these options disclosed by *Innings et al.* is a disclosure of controlling pressure change rates in a single pressure change phase or changing the pressure change rates and still be within the duration of a standard pressure change phase.

If the examiner maintains this rejection, it is respectfully requested that all of the specific claim elements be strictly compared to *Innings et al.*

Allowability over *Innings et al.*

In view of the above, *Innings et al.* fails to disclose a method as recited in any of the amended claims. Thus, Applicants respectfully submit that the amended claims are not anticipated by *Innings et al.* Again, it may be helpful to begin with a reply to the examiner's response to arguments filed April 30, 2009.

The examiner states at pages 13 and 14 of the Action that,

> "In response to applicant's argument that Innings does not control a pressure curve (page 17, para 2), the invention is directed to "Methods of controlling the milking of an animal" (see title). Figs 2 and 3 show the pressure curves during different flow conditions. The controller controls the process of milking, which produces these graphs, and thus controls the curves."

With respect, Applicants note that controlling curves in general is not the same as controlling the pressure changing phase *durations* and changing those rates during milking. Thus, Applicants respectfully request that the examiner cite to the disclosure of *Innings et al.* that corresponds to *each element* of the claims, *i.e.*, "retaining the total duration for the pressure changing phase, with the two pressure changing speed rates, to not substantially exceed the defined standard pressure changing phase duration."

Thus, there is no strict correspondence between *Innings et al.* and the claims of this application. Applicants' counsel is available for a telephone interview to discuss this and all other rejections raised by the examiner.

Rejection Under 35 U.S.C. §103

Claims 15 and 16 were rejected under 35 U.S.C. §103(a) over *Grimm et al.* (discussed above) in view of *Kaneko*, U.S. Patent 5,897,304 for the reasons stated on page 10 of the action. Claims 15 and 16 would not have been obvious to one skilled in the art because not all of the claim elements of claim 1 (from which claims 15 and 16 depend) are present in *Grimm et al.* and *Kaneko*. Further, there is no teaching, suggestion or motivation to one skilled in the art to supply the missing elements described in much detail above.

Claim 27 was rejected under 35 U.S.C. §103(a) over *Grimm et al.* (discussed above) in view of *Krone*, U.S. Patent 5,628,491 (copy enclosed) for the reasons listed on pages 10 to 11 of the action. Claim 17 would not have been obvious to one skilled in the

art because not all of the claim elements of claim 1 (from which claim 17 depends is present in *Grimm et al.* and *Krone*.) Further, there is no teaching, suggestion or motivation to one skilled in the art to supply the missing elements.

Pages 11 and 12 of the action state the phrase "without substantially increasing the milking time" is not properly stated in the body of the claim - only in the preamble. Applicants are not relying on the preamble to provide this feature because the body of the claim recites a corresponding and related feature *i.e.* "to not substantially exceed the defined standard pressure changing phase duration." Pressure changing phase durations and milking times are directly related. There is no need to recite redundant features of the invention.

Dependent Claims Are Allowable

Applicants respectfully submit that pursuant to 35 U.S.C. §112 paragraph 4, the dependent claims incorporate by reference all the limitations of the claim to which they refer and include their own patentable features, and are therefore in condition for allowance for the reasons stated above with respect to amended claims 1 and 18. Therefore, Applicants respectfully request the withdrawal of all claim rejections and prompt allowance of the claims.

Conclusion

For the foregoing reasons, the amended claims are allowable and Applicants respectfully request this case be passed to issue.

Respectfully submitted,

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